

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-34. (Canceled).

35. (Previously presented) A pneumatic tire comprising a carcass structure having at least one carcass ply and at least one annular reinforcing structure associated with said carcass ply, a tread band made of an elastomeric material at a radially outer position with respect to said carcass structure, a belt structure interposed between said carcass structure and said tread band and a pair of axially opposite side walls on said carcass structure, the tread band comprising:

- i) at least one radially extending first sector substantially of a first elastomeric material;
- ii) a plurality of radially extending second sectors positioned at axially opposite sides of said at least one first sector and substantially of a second elastomeric material;
- iii) at least one longitudinal groove formed in said at least one first sector and extending substantially for the entire circumferential development of the tread band;

wherein said first elastomeric material has a modulus of elasticity under compression at 23°C greater than the modulus of elasticity under compression at 23°C of said second elastomeric material, and

wherein the modulus of elasticity under compression at 23°C of said first elastomeric material is about 20 to about 80 MPa.

36. (Previously presented) The pneumatic tire according to claim 35, wherein the modulus of elasticity under compression at 23°C of said second elastomeric material is about 4 to about 15 MPa.

37. (Previously presented) The pneumatic tire according to claim 35, wherein the ratio between the modulus of elasticity under compression at 23°C of the first elastomeric material and the modulus of elasticity under compression at 23°C of the second elastomeric material of the tread band is not lower than about 1.30.

38. (Previously presented) The pneumatic tire according to claim 37, wherein the ratio between the modulus of elasticity under compression at 23°C of the first elastomeric material and the modulus of elasticity under compression at 23°C of the second elastomeric material is about 1.5 to about 20.

39. (Previously presented) The pneumatic tire according to claim 38, wherein the ratio between the modulus of elasticity under compression at 23°C of the first elastomeric material and the modulus of elasticity under compression at 23°C of the second elastomeric material is about 2.3 to about 7.

40. (Previously presented) The pneumatic tire according to claim 35, wherein the IRHD hardness at 23°C of the first elastomeric material, measured according to standard ISO 48, is about 75 to about 95.

41. (Previously presented) The pneumatic tire according to claim 35, wherein the IRHD hardness at 23°C of the second elastomeric material, measured according to standard ISO 48, is about 35 to about 80.

42. (Currently amended) The pneumatic tire according to claim [[40]] 35, wherein the ratio between the IRHD hardness at 23°C of the first elastomeric material, measured according to standard ISO 48, and the IRHD hardness at 23°C of the second elastomeric material, measured according to standard ISO 48, is not lower than about 1.10.

43. (Currently amended) The pneumatic tire [[(1)]] according to claim 42, wherein the ratio between the IRHD hardness at 23°C of the first elastomeric material, measured according to standard ISO 48, and the IRHD hardness at 23°C of the second elastomeric material, measured according to standard ISO 48, is about 1.15 to about 2.70.

44. (Previously presented) The pneumatic tire according to claim 35, wherein the tread band is provided with a plurality of longitudinal grooves and wherein said grooves are formed in respective first sectors, radially extending and axially spaced apart, substantially of said first elastomeric material.

45. (Previously presented) The pneumatic tire according to claim 35, wherein said at least one first sector is radially extending substantially for the entire thickness of the tread band.

46. (Previously presented) The pneumatic tire according to claim 35, wherein an additional layer of elastomeric material is interposed between said tread band and said belt structure.

47. (Previously presented) The pneumatic tire according to claim 46, wherein said layer is substantially of said first elastomeric material.

48. (Previously presented) The pneumatic tire according to claim 46, wherein said additional layer is substantially of said second elastomeric material.

49. (Previously presented) The pneumatic tire according to claim 46, wherein said layer has a thickness of 1 to 5 mm.

50. (Previously presented) The pneumatic tire according to claim 35, wherein the width of said at least one first sector is at least equal to the width of said at least one longitudinal groove.

51. (Previously presented) The pneumatic tire according to claim 50, wherein the difference between the width of said at least one first sector and the width of said at least one longitudinal groove is 4 to 10 mm.

52. (Previously presented) The pneumatic tire according to claim 35, wherein said at least one longitudinal groove is positioned astride the median plane of said at least one first sector.

53. (Previously presented) A process for building a pneumatic tire comprising the steps of:

a) building a carcass structure having at least one carcass ply associated with at least one annular reinforcing structure;

b) assembling a belt structure;

c) arranging, at a radially outer position with respect to said belt structure, at least one radially extending first sector of a tread band, substantially of a first elastomeric material having, after vulcanization, a value of the modulus of elasticity under compression at 23°C of about 20 to about 80 MPa; and

d) arranging, at a radially outer position with respect to said belt structure, a plurality of radially extending second sectors of the tread band, axially spaced apart and substantially of a second elastomeric material having, after vulcanization, a value of the modulus of elasticity under compression at 23°C lower than the value of the modulus of elasticity under compression at 23°C of said first elastomeric material;

wherein said steps c) and d) are carried out in such a way that said second sectors are positioned at axially opposite sides of said at least one first sector.

54. (Previously presented) The process according to claim 53, wherein said belt structure is shaped on a substantially cylindrical auxiliary drum and wherein said steps c) and d) comprise the steps of:

e) positioning said auxiliary drum at a first delivery member of the first elastomeric material;

- f) delivering by means of said first delivery member at least one elongated element made of said first elastomeric material at a radially outer position with respect to said belt structure while carrying out a relative displacement between the first delivery member and the auxiliary drum, so as to form said at least one first sector of the tread band;
- g) positioning the auxiliary drum at a second delivery member of the second elastomeric material; and
- h) delivering by means of said second delivery member at least one elongated element made of said second elastomeric material at a radially outer position with respect to said belt structure while carrying out a relative displacement between the second delivery member and the auxiliary drum so as to form said second sectors of the tread band axially spaced apart and positioned at opposite sides of said at least one first sector.

55. (Previously presented) The process according to claim 54, wherein said steps f) and h) of delivering the elongated elements of said first and second elastomeric materials are carried out by rotating said auxiliary drum about its rotation axis.

56. (Previously presented) The process according to claim 54, wherein the relative displacement between the delivery member and the auxiliary drum is carried out by imparting to the auxiliary drum a first translational movement along a direction substantially parallel to its rotation axis and/or a second translational movement along a direction substantially perpendicular to said axis.

57. (Previously presented) The process according to claim 54, wherein said steps f) and h) of delivering the elongated elements of said first and second elastomeric materials are carried out by forming a plurality of coils axially arranged side-by-side and/or radially superposed to define said at least one first and said second sectors of the tread band.

58. (Previously presented) The process according to claim 53, wherein said belt structure is assembled on a substantially toroidal support and wherein said steps c) and d) comprise the steps of:

- e') positioning said substantially toroidal support at a first delivery member of the first elastomeric material;
- f') delivering by means of said first delivery member at least one elongated element made of said first elastomeric material at a radially outer position with respect to said belt structure while carrying out a relative displacement between the first delivery member and the substantially toroidal support, so as to form said at least one first sector of the tread band;
- g') positioning the substantially toroidal support at a second delivery member of the second elastomeric material; and
- h') delivering by means of said second delivery member at least one elongated element made of said second elastomeric material at a radially outer position with respect to said belt structure while carrying out a relative displacement between the second delivery member and the substantially toroidal

support, so as to form said second sectors of tread band axially spaced apart and positioned at axially opposite sides of said at least one first sector.

59. (Previously presented) The process according to claim 58, wherein said steps f') and h') of delivering the elongated elements of said first and second elastomeric materials are carried out by rotating said substantially toroidal support about its rotation axis.

60. (Previously presented) The process according to claim 58, wherein the relative displacement between the delivery member and the substantially toroidal support is carried out by imparting to the substantially toroidal support a first translational movement along a direction substantially parallel to its rotation axis and/or a second translational movement along a direction substantially perpendicular to said axis.

61. (Previously presented) The process according to claim 58, wherein said steps f') and h') of delivering the elongated elements of said first and second elastomeric materials are carried out by forming a plurality of coils axially arranged side-by-side and/or radially superposed to define said at least one first and said second sectors of the tread band.

62. (Previously presented) The process according to claim 58, wherein said substantially toroidal support is substantially rigid.

63. (Previously presented) The process according to claim 53, further comprising the step of delivering, at a radially outer position with respect to said belt

structure, at least one additional layer of elastomeric material before carrying out said step c) of delivering said at least one first sector.

64. (Previously presented) The process according to claim 53, further comprising the step of delivering, at a radially outer position with respect to said belt structure, at least one additional layer of elastomeric material simultaneously with said step c) of delivering said at least one first sector.

65. (Previously presented) The process according to claim 53, further comprising the step of delivering, at a radially outer position with respect to said belt structure, at least one additional layer of elastomeric material before carrying out said step d) of delivering said plurality of second sectors.

66. (Previously presented) The process according to claim 53, further comprising the step of delivering, at a radially outer position with respect to said belt structure, at least one additional layer of elastomeric material simultaneously with said step d) of delivering said plurality of second sectors.

67. (Previously presented) The process according to claim 63, wherein said layer is substantially of said first elastomeric material.

68. (Previously presented) The process according to claim 63, wherein said layer is substantially of said second elastomeric material.

69. (New) The pneumatic tire according to claim 35, wherein the modulus of elasticity under compression at 23°C of said first elastomeric material is about 30 to about 80 MPa.

70. (New) The process according to claim 53, wherein the modulus of elasticity under compression at 23°C of said first elastomeric material is about 30 to about 80 MPa.

71. (New) A pneumatic tire comprising a carcass structure having at least one carcass ply and at least one annular reinforcing structure associated with said carcass ply, a tread band made of an elastomeric material at a radially outer position with respect to said carcass structure, a belt structure interposed between said carcass structure and said tread band and a pair of axially opposite side walls on said carcass structure, the tread band comprising:

- i) at least one radially extending first sector substantially of a first elastomeric material;
- ii) a plurality of radially extending second sectors positioned at axially opposite sides of said at least one first sector and substantially of a second elastomeric material;
- iii) at least one longitudinal groove formed in said at least one first sector and extending substantially for the entire circumferential development of the tread band; and
- iv) an underlayer interposed between the tread band and the belt structure suitable for providing global rigidity to the tread, the underlayer being

integral with the first sector and comprised substantially of the first elastomeric material;

wherein said first elastomeric material has a modulus of elasticity under compression at 23°C greater than the modulus of elasticity under compression at 23°C of said second elastomeric material, and

wherein the modulus of elasticity under compression at 23°C of said first elastomeric material is about 20 to about 80 MPa.

72. (New) The pneumatic tire according to claim 71, wherein the modulus of elasticity under compression at 23°C of said second elastomeric material is about 4 to about 15 MPa.

73. (New) The pneumatic tire according to claim 71, wherein the ratio between the modulus of elasticity under compression at 23°C of the first elastomeric material and the modulus of elasticity under compression at 23°C of the second elastomeric material of the tread band is not lower than about 1.30.

74. (New) The pneumatic tire according to claim 73, wherein the ratio between the modulus of elasticity under compression at 23°C of the first elastomeric material and the modulus of elasticity under compression at 23°C of the second elastomeric material is about 1.5 to about 20.

75. (New) The pneumatic tire according to claim 74, wherein the ratio between the modulus of elasticity under compression at 23°C of the first elastomeric

material and the modulus of elasticity under compression at 23°C of the second elastomeric material is about 2.3 to about 7.

76. (New) The pneumatic tire according to claim 71, wherein the IRHD hardness at 23°C of the first elastomeric material, measured according to standard ISO 48, is about 75 to about 95.

77. (New) The pneumatic tire according to claim 71, wherein the IRHD hardness at 23°C of the second elastomeric material, measured according to standard ISO 48, is about 35 to about 80.

78. (New) The pneumatic tire according to claim 71, wherein the ratio between the IRHD hardness at 23°C of the first elastomeric material, measured according to standard ISO 48, and the IRHD hardness at 23°C of the second elastomeric material, measured according to standard ISO 48, is not lower than about 1.10.

79. (New) The pneumatic tire according to claim 78, wherein the ratio between the IRHD hardness at 23°C of the first elastomeric material, measured according to standard ISO 48, and the IRHD hardness at 23°C of the second elastomeric material, measured according to standard ISO 48, is about 1.15 to about 2.70.

80. (New) The pneumatic tire according to claim 71, wherein the tread band is provided with a plurality of longitudinal grooves and wherein said grooves are formed

in respective first sectors, radially extending and axially spaced apart, substantially of said first elastomeric material.

81. (New) The pneumatic tire according to claim 71, wherein said layer has a thickness of 1 to 5 mm.

82. (New) The pneumatic tire according to claim 71, wherein the width of said at least one first sector is at least equal to the width of said at least one longitudinal groove.

83. (New) The pneumatic tire according to claim 82, wherein the difference between the width of said at least one first sector and the width of said at least one longitudinal groove is 4 to 10 mm.

84. (New) The pneumatic tire according to claim 71, wherein said at least one longitudinal groove is positioned astride the median plane of said at least one first sector.

85. (New) A process for building a pneumatic tire comprising the steps of:

- a) building a carcass structure having at least one carcass ply associated with at least one annular reinforcing structure;
- b) assembling a belt structure;
- c) arranging, at a radially outer position with respect to said belt structure, at least one radially extending first sector of a tread band, substantially of a first elastomeric material having, after vulcanization, a value of the modulus of elasticity under compression at 23°C of about 20 to about 80 MPa;

d) arranging, at a radially outer position with respect to said belt structure, a plurality of radially extending second sectors of the tread band, axially spaced apart and substantially of a second elastomeric material having, after vulcanization, a value of the modulus of elasticity under compression at 23°C lower than the value of the modulus of elasticity under compression at 23°C of said first elastomeric material; and

e) arranging, at a radially outer position with respect to said belt structure and a radially inner position with respect to said first and second sectors, an underlayer suitable for providing global rigidity to the tread band, the underlayer being integral with the first sector and comprised substantially of the first elastomeric material;

wherein said steps c) and d) are carried out in such a way that said second sectors are positioned at axially opposite sides of said at least one first sector.

86. (New) The process according to claim 85, wherein said belt structure is shaped on a substantially cylindrical auxiliary drum and wherein said steps c) and d) comprise the steps of:

f) positioning said auxiliary drum at a first delivery member of the first elastomeric material;

g) delivering by means of said first delivery member at least one elongated element made of said first elastomeric material at a radially outer position with respect to said belt structure while carrying out a relative

displacement between the first delivery member and the auxiliary drum, so as to form said at least one first sector of the tread band;

- h) positioning the auxiliary drum at a second delivery member of the second elastomeric material; and
- i) delivering by means of said second delivery member at least one elongated element made of said second elastomeric material at a radially outer position with respect to said belt structure while carrying out a relative displacement between the second delivery member and the auxiliary drum so as to form said second sectors of the tread band axially spaced apart and positioned at opposite sides of said at least one first sector.

87. (New) The process according to claim 86, wherein said steps g) and i) of delivering the elongated elements of said first and second elastomeric materials are carried out by rotating said auxiliary drum about its rotation axis.

88. (New) The process according to claim 86, wherein the relative displacement between the delivery member and the auxiliary drum is carried out by imparting to the auxiliary drum a first translational movement along a direction substantially parallel to its rotation axis and/or a second translational movement along a direction substantially perpendicular to said axis.

89. (New) The process according to claim 86, wherein said steps g) and i) of delivering the elongated elements of said first and second elastomeric materials are

carried out by forming a plurality of coils axially arranged side-by-side and/or radially superposed to define said at least one first and said second sectors of the tread band.

90. (New) The process according to claim 85, wherein said belt structure is assembled on a substantially toroidal support and wherein said steps c) and d) comprise the steps of:

- e') positioning said substantially toroidal support at a first delivery member of the first elastomeric material;
- f') delivering by means of said first delivery member at least one elongated element made of said first elastomeric material at a radially outer position with respect to said belt structure while carrying out a relative displacement between the first delivery member and the substantially toroidal support, so as to form said at least one first sector of the tread band;
- g') positioning the substantially toroidal support at a second delivery member of the second elastomeric material; and
- h') delivering by means of said second delivery member at least one elongated element made of said second elastomeric material at a radially outer position with respect to said belt structure while carrying out a relative displacement between the second delivery member and the substantially toroidal support, so as to form said second sectors of tread band axially spaced apart and positioned at axially opposite sides of said at least one first sector.

91. (New) The process according to claim 90, wherein said steps f') and h') of delivering the elongated elements of said first and second elastomeric materials are carried out by rotating said substantially toroidal support about its rotation axis.

92. (New) The process according to claim 90, wherein the relative displacement between the delivery member and the substantially toroidal support is carried out by imparting to the substantially toroidal support a first translational movement along a direction substantially parallel to its rotation axis and/or a second translational movement along a direction substantially perpendicular to said axis.

93. (New) The process according to claim 90, wherein said steps f') and h') of delivering the elongated elements of said first and second elastomeric materials are carried out by forming a plurality of coils axially arranged side-by-side and/or radially superposed to define said at least one first and said second sectors of the tread band.

94. (New) The process according to claim 90, wherein said substantially toroidal support is substantially rigid.

95. (New) The process according to claim 85, wherein the underlayer has a thickness of 1 to 5 mm.